

TRIAX C-HD415 CX

Digital Cable-TV set-top box

305041



TRIAX - your ultimate connection

License

Manufactured under license from Dolby Laboratories.

Contents

Safety Precautions

To prevent hazardous and dangerous situations always install and use the set-top box according to the instructions below.

Mains supply

- 95-240 V AC 50/60Hz. Only use the original power supply. When disconnecting from the mains pull the plug rather than the wire.
- Use only mains connections installed by professionals.

Placing

- Place the set-top box on a solid and surface close to the mains connection. Ensure that the mains cord is places rightly to avoid later damages hereon.
- Never place the set-top box on top of other electrical units.
- Never place the set-top box next to a heater or other source of heat or direct sunlight.
- Never expose the set-top box to a high level of dust.

Ventilation

- Never place the set-top box in a closed cabinet without proper ventilation.
- Never put objects on the top of the set-top box preventing natural ventilation.

Liquids etc.

- Never expose the set-top box to liquids or moisture, and never place objects containing any kind of liquid on the top of the box.
- Never place hot or burning items such as candles on the set-top box.

Thunderstorm

- In case of thunder storms or when left unused for long periods of time, it is recommended to disconnect the set-top box from the mains and antenna.

Accessories

- Never use accessories not being recommended by the manufacturer.

Service

- The set-top box should be opened by authorized technicians only. Warranty is affected if non-authorized persons open the box.

Cleaning

- The set-top box should always be kept dry and only dry cleaning should be done.

Disconnect the mains **IMMEDIATELY** and contact an authorized technician place if:

- Mains cord or plug is damaged.
- The set-top box has been exposed to foreign bodies or liquid.
- The set-top box doesn’t work.
- The set-top box is heavily damaged.

The function of the set-top box is to receive open channels (Free-To-Air) and scrambled digital channels. Any other use of the set-top box may result in material damage or personal injury and warranty is void.

The manufacturer is by no means responsible for material damage or personal injury occurred as a result of improper use or if the instructions are not followed.

Disposal of batteries and set-top box

Within the European Union this label indicates that the product cannot be disposed together with general household waist. Neither the set-top box nor the batteries for the remote control unit can be disposed together with general household.

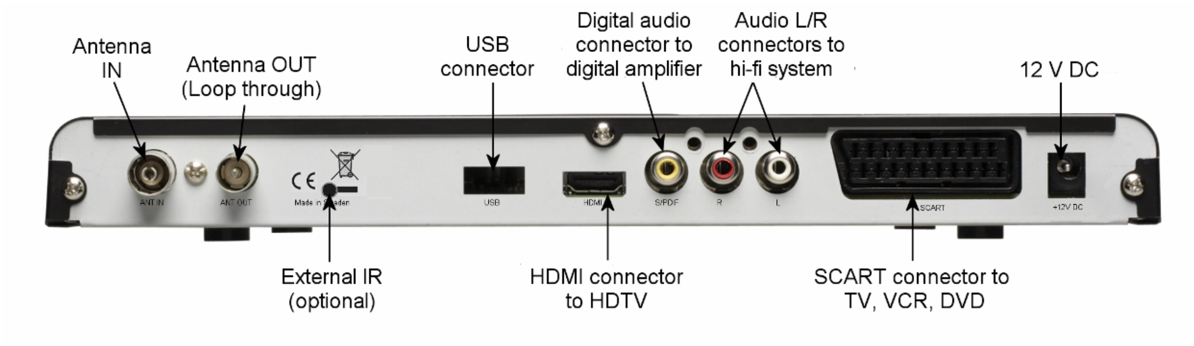
For proper treatment and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.

Overview

Front panel incl. CA-module and smart card



Rear panel

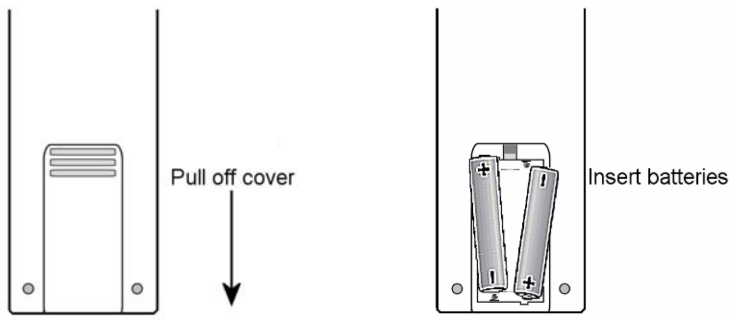


Note Refer to the user manual of the units you want to connect (TV, VCR, DVD player, hi-fi equipment, etc.).

Inserting batteries in remote control unit

The remote control unit is operated by two AAA batteries. Please note the following:

- Insert the batteries carefully in their right position (+/-), and place the cover carefully after insertion. Wrong insertion can lead to battery leakage and corrosion, and thus damage the unit.



- When batteries are old replace them with two new batteries. Never insert old batteries and never one used and one new.
- Do not mix different battery types such as alkaline and manganese batteries.
- Old batteries can start leaking and damage the unit. If the remote control unit is not used for a very long time you should remove the batteries from the unit
- Children should not play with batteries. Batteries may contain toxics.

The remote control unit

⏻	:	Turns the set-top box on/off standby
0-9	:	Select channel directly/ number or letter input
FAV	:	List of favourite channels
RECALL	:	Back to the previous channel
Red/Green/ Yellow/Blue	:	Coloured buttons, multi functional keys
CH+	:	Next channel – cursor up
CH-	:	Previous channel – cursor down
V-	:	Volume lower – cursor left
V+	:	Volume higher – cursor right
OK	:	Confirms selections
BACK	:	Go to previous menu or exit menu mode/Stops an operating Timer
EPG	:	Displays Electronic Programme
MENU	:	Displays the main menu
INFO	:	Information about the current event
🔇	:	(Mute). Switches sound on or off
TEXT	:	Teletext on/off
TV/R	:	Switches between TV mode and radio mode
AUDIO	:	Change audio mode
SUB	:	Subtitles on/off

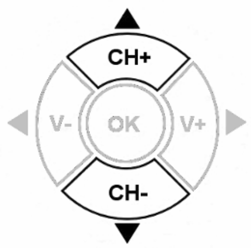


How to use the remote control

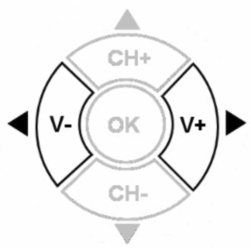
To navigate through the different on-screen menus of the set-top box, you use the following keys:



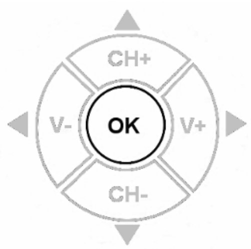
Enter the main menu – or – returns to the main menu from any submenu.



Move the cursor / selects submenus.



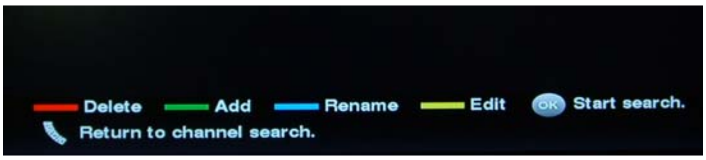
Move the cursor / select from a range of options.



Enter the selected menu.



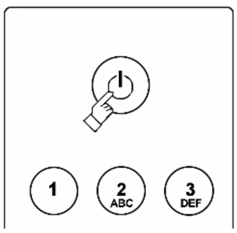
Save the settings and go back to previous menu / in the main menu you exit menu system and return to the normal viewing screen.

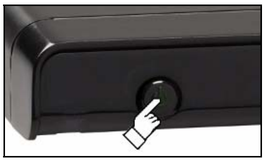


The information bar at the bottom of the TV screen displays the functions assigned to various keys on the remote control. You use these keys to adjust the individual settings in the submenus.

Use Now

1 Switch on TV and the set-top box





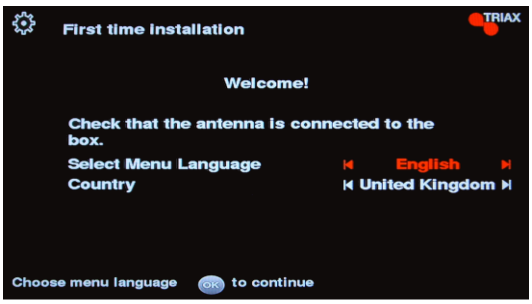
Switch on TV and set-top box using your remote control units.

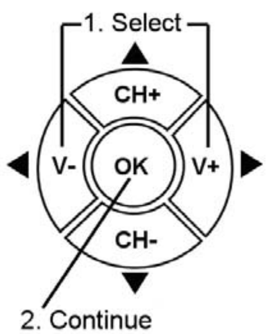
2 Welcome



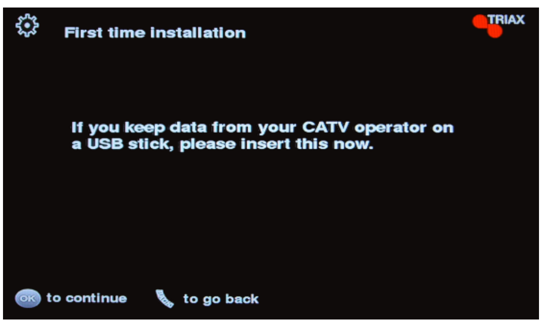
Follow the instructions displayed on the TV screen.

3 Select language and country





4 Data for channel searching

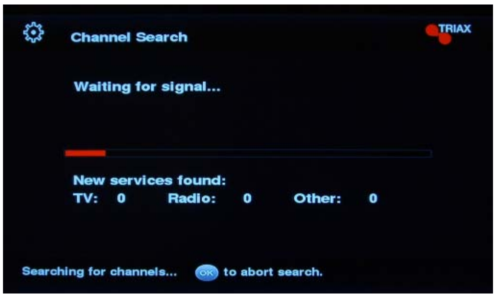




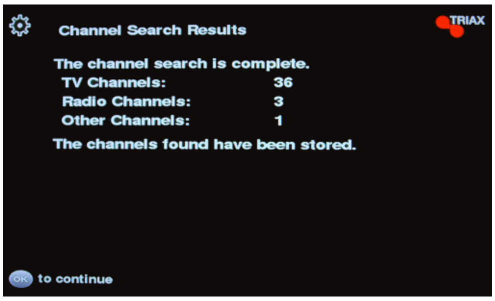
In case your CATV operator has provided you with a USB stick, place the stick in the USB socket at the rear of the set-top box. Press the **OK** key to start the channel search.
The information that the USB stick contains is used in connection with the channel search.

Note Even if you do not use a USB stick you have to press the **OK** key to start the channel search.
Without the USB stick the channel search uses the settings specified below the menu item **Advanced search**.

5 Searching for channels



This process may take several minutes.





The result of the search is displayed. Press the **OK** key to continue.

6 Ready for use



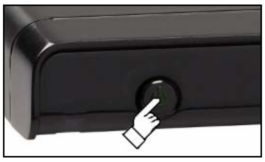
Now the set-top box is ready for using.



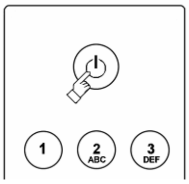
Press **OK** to watch TV.

Day-to-day Use

Switch the set-top box on or off

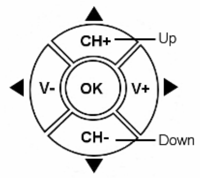


or

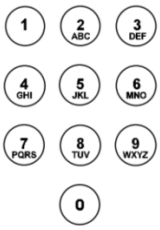


Press the **Standby** key on the set-top box or the remote control to switch the set-top box on or off.

Select a channel



or



or

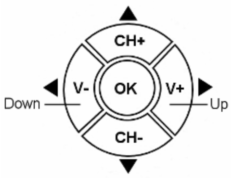


Use the **CH+/CH-** keys or the numeric keys to select a channel.

Pressing the **OK** key displays the channel list. Use the **CH+/CH-** keys to select a channel, press OK to select the channel.

You can use the **RECALL** key to change to the previously selected channel.

Adjust the volume



or

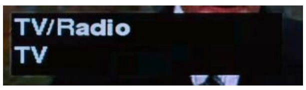


Use the **V+/V-** keys to turn the volume up or down.

Use the (Mute) key to turn the sound off or on.

Switch between TV and radio



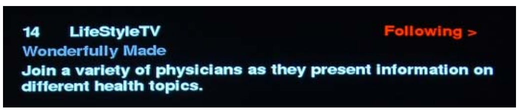


Use the **TV/R** key to switch between TV and radio. Press **OK** to open the TV list or the radio list

Show the information bar







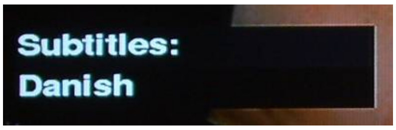
Use the **INFO** key to show the information bar. The information bar displays info about: channel name, number, current and following event and time.

Pressing the **INFO** key twice displays more detailed information about the event. Press the key again to remove the information.

Note Every time you change channel the information bar is displayed automatically.

Display subtitles





Use the **SUB** key to display the subtitles if the programme offers the possibility.

Using the **SUB** key you can browse the subtitle languages that the channel offers.

Note You can only select language if a channel offers subtitles in more languages.

View teletext

1 Switch to teletext

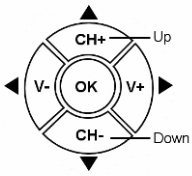




Use the **TEXT** key to display teletext.

2 Select the page





Use the numeric keys or the **CH+/CH-** keys to select a page.

3 Return to TV



Use the **TEXT** key to switch off teletext.

Using Electronic Programme Guide (EPG)

1 View EPG

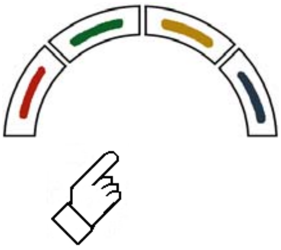




Using the **EPG** key you get an on-screen listing of events currently broadcast and the future broadcasts over the next seven days, depending on the broadcasters.

Not all broadcasters provide this listing.

2 Sorting the information



Each of the coloured keys has a specific function in the guide:

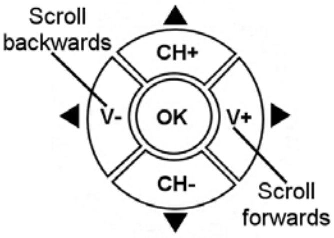
Red: Sort the channels according to channel number.

Green: Sort according to the time of events.

Yellow: Sort according to the names of events.

Blue: Transfer an event directly to the timer.

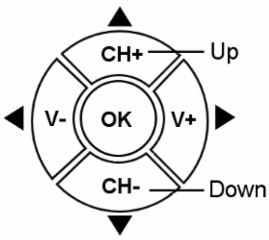
3 Scrolling the listing of events



Use the **V-**/**V+** keys to scroll through the next seven days.

If you have sorted the list according to channels you scroll to a new channel every time you press the **V-**/**V+** keys.

4 Select an event



Use the **CH+**/**CH-** keys to select an event in the list.

Note If you press **OK** to the event you have selected you automatically start watching the event.

5 To view details of the event





Using the **INFO** key you can view the details of the event you selected in the list.

6 Return to TV



Use the **EPG** key to return to the event you were watching on TV.

Favourite channel lists



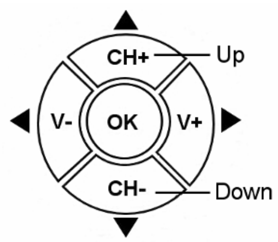


Using the **FAV** key you get easy access to your lists of favourite channels. Pressing the **FAV** key displays which of the lists you used last time. Pressing the **FAV** key you can browse your lists of favourite channels.





Press the **OK** key to open the list of favourite channels.





Use the **CH+/CH-** keys to select one of your favourite channels. Press the **OK** key to confirm your selection and return to TV.

Note If you use the **CH+/CH-** keys, having selected a list of favourite channels and next a channel, be aware that you can only switch between the channels in the list of favourites.
Press the **TV/R** key to get the total list of TV or radio channels.

Audio





Using the **AUDIO** key you get another audio language, depending on the broadcasters.

Press the **AUDIO** key to scroll though the languages offered.

Not all broadcasters provide this option.

How to Use the On-Screen Menus

You will get access to the entire operation and programming of the set-top box through the on-screen main menu and the submenus.
You navigate through the menus using the keys displayed in the following five actions:

1 Display the main menu



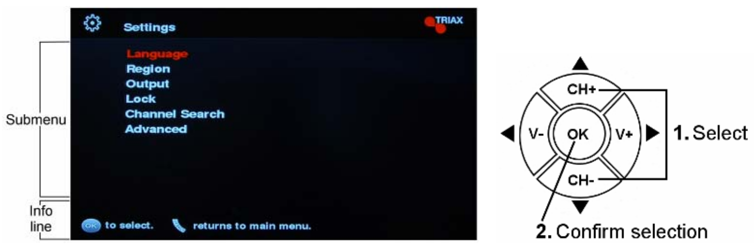
From the main menu you have access to 5 different submenus.

2 Select a menu



Select the desired menu (icon) and press **OK** to continue to the submenus.

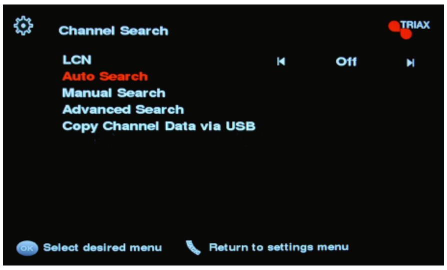
3 Select a submenu

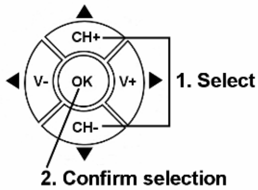


Having selected a submenu you can now adjust the different settings.

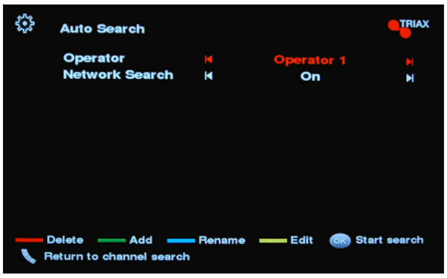
4 Select or adjust

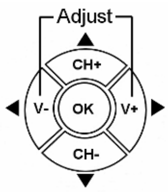
a





Move the cursor to the desired function and press **OK** to open the desired function.



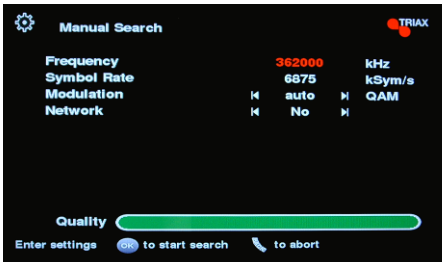


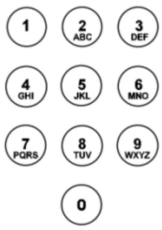
Select the desired setting.



Press the **BACK** key to store the setting and revert to the previous menu.

b





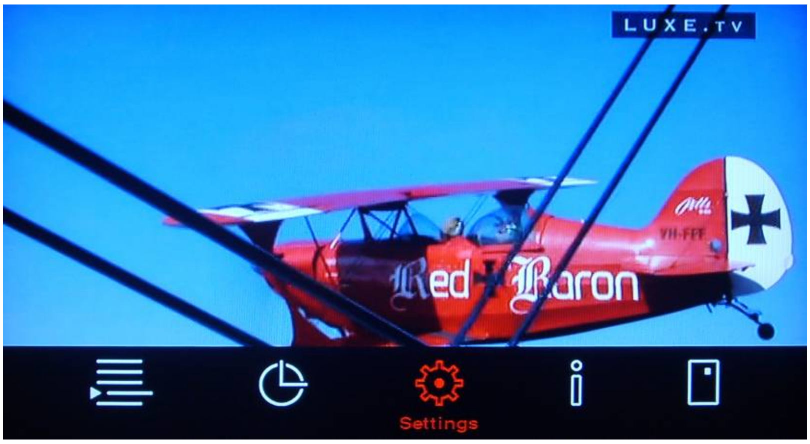
Change the settings.

5 To return to TV



Pressing the **BACK** key from the main menu will exit the menu and return to the normal viewing screen.

Overview of Menus



The main menu contains the following menus and submenus:

Menus	Submenus
Channel Editor	
Timer	
Settings	**Language**
	Region
	Output
	Lock
	Channel Search
	Advanced
System info	
Card info	**Conax Embedded CA**

Editing of Channels

Via the **Channel Editor** menu you can delete, change names, etc. of the different channels. Besides you have access to create and edit your lists of favourite channels.



The information bar displays which keys have which function in the **Channel Editor** window.

Keys	**Description**
Red / Delete	Delete the selected channel from the list.
Green / Skip	Use this key to mark selected channels for skipping when zapping through the channel list.
Yellow / Browse channel lists	Displays TV lists, Radio lists and Favourite lists. Here you get access to create and edit your own favourite lists.
Blue / rename	Rename the selected channel.

Favourite lists

From the **Channel Editor** menu you press the **Yellow** key to open the **Active Channel Lists** menu.



In this menu you select one of the favourite lists. Press the **Blue** key to edit the list.
Press the **Red** key to display all six favourite lists (A-F).



In edit mode you select one channel at a time in the list to the left. Pressing the **OK** key the channel is moved to the favourite list which is placed to the right.



Moving the cursor to the favourite list you can change the order of the channels using the **OK** key and the **CH+/CH-** keys.

You can remove channels from your favourite lists by pressing the **0** key.

Using the Timer Function

Selecting **Timer** in the main menu you get access to program the start/stop function of the set-top box. This function is very useful for example if you want to record a certain programme, but please remember to program both your set-top box and the DVD/VCR recorder equally. The timer function can also start and stop the set-top box automatically at the same time every day, or automatically change to another channel at a prefixed time.



Channel	Select the required channel.
Date	Enter the date and year when you want to turn the set-top box on.
Start time	Enter start time.
Stop time	Enter stop time.
Repeat	Select whether you want to repeat this timer. There are three ways of repeating the timer.

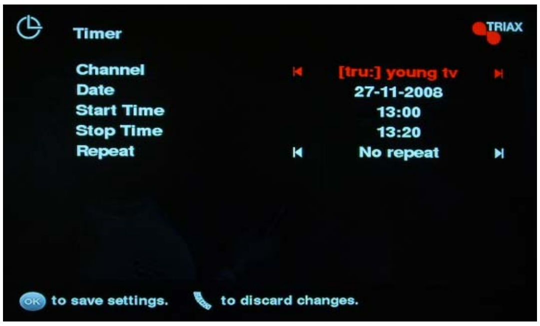
Timer programming using EPG

Using the Electronic Programme Guide (EPG) you can easily set a timer in the timer list:

⇒ Select the event you want to record or use to start the set-top box.



⇒ Press the **Blue** key to send the information to the timer.



Now you are automatically redirected to the Timer window where information about the selected event have been transferred and inserted into the five fields. The only field where you may want to change the contents is the **Repeat** field.

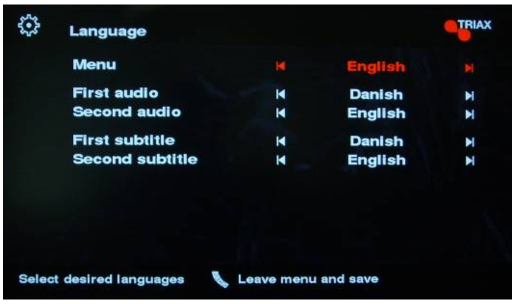
⇒ Press **OK** to save the timer setting.

Customizing the Set-top Box

Selecting **Settings** in the main menu you get access to six submenus which will help you customize the set-top box. By customizing the set-top box you determine the language of the menus, which channels you want to receive, which channels you want to lock, aspect ratio etc.

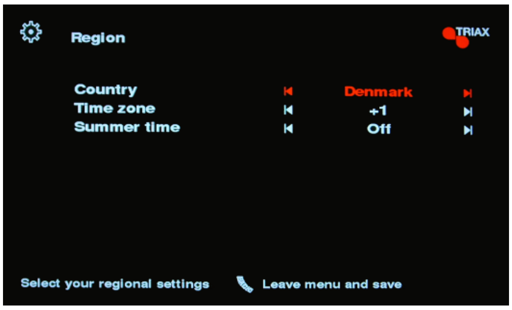


Language



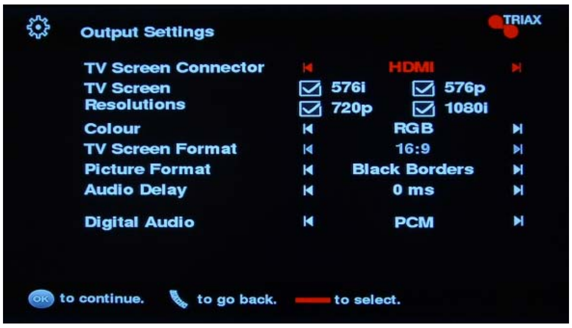
Menu	Select the desired language for the on-screen menus.
First audio	Select the preferred audio track.
Second audio	Select second choice of audio track if first choice is not available.
First subtitle	Select which language you would like to use for the subtitles.
Second subtitle	Select second choice of subtitle language if first choice is not available.

Region



Country	Select country
Time zone	Select time zone according to GMT.
Summertime	Select if internal clock should automatically be adjusted to summer time

Output



<table>
<tr><td rowspan="2">TV screen connector</td><td colspan="2">Select the type of connection from your set-top box to your TV screen. You have three options: HDMI, SCART and Component. Depending on which of the three options you have selected you get different options for TV screen resolution and Colour.</td></tr>
<tr><td>HDMI</td><td>Options for screen resolution: 576i, 576p, 720p, 1080i.
Options for colour system: RGB, YCbCr 4:4:4, YCbCr 4:4:2</td></tr>
</table>

	SCART	Screen resolution: 576i. No options. Colour system: RGB. No options.
	Component	Options for screen resolution: 576p, 720p, 1080i. Colour system: YPbPr. No options.
TV screen resolution	Select the screen resolution that matches the screen connector you have selected.	
Colour	Select the desired colour system. The colour system options depend on which screen connector you have selected.	
TV screen format	Select if your TV screen is 16:9 or 4:3 format.	
Picture format	Select the desired picture format. The options depend on which screen format you have selected. If you have selected 4:3 we recommend that you should select “Letter Box”. If you have selected 16:9 we recommend that you should select “Black Borders”.	
Audio delay	Adjust the audio delay to synchronize picture and sound. Using for example surround sound system the sound may be delayed and thus needs compensation.	
Digital audio	Select desired format, PCM or Dolby Digital.	

Lock



Lock / Unlock channels	Select **Locks / Unlock channels**. More details in next section.
Change PIN	Select **Change PIN**. More details in next section.
Settings	Select whether you want to hinder access to the **Settings** menu by asking for the PIN code to open the menu.

Receiver	Select whether you want to hinder access to the set-top box by asking for the PIN code every time you start the set-top box from standby.

Lock/Unlock channels

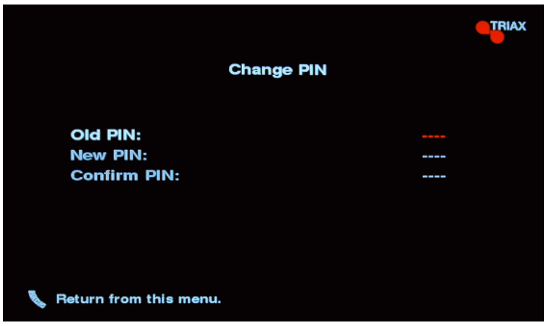


Through the **Channel Lock** function you can block certain channels so access to them is only possible after entering the PIN code.

⇒ Select the channel you want to lock and press **OK** to activate the lock.

A locked channel will be marked with a small key in the channel list. Locking can only be done one channel at a time.

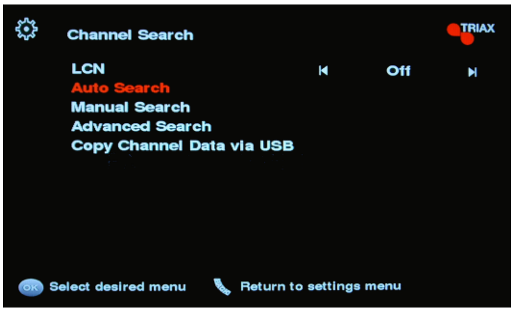
Change PIN



Old PIN	Enter your personal PIN code. **Factory setting is: 0000**
New PIN	Enter new PIN code.
Confirm PIN	Re-enter the new PIN code to confirm it.

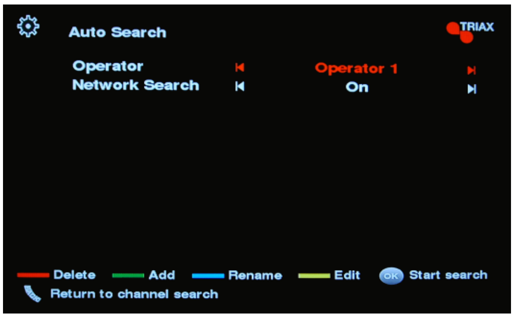
Channel search

The set-top box offers 3 different ways of searching for channels: **Automatic search**, **Manual search** and **Advanced search**.



LCN	Logic Channel Numbering on/off. Some broadcasters offer **LCN** support and in those cases the order of the channels after a search will always be prioritized correctly.
Auto search	Select **Auto search**. More details in the next section.
Manual search	Select **Manual search**. More details in the next section.
Advanced search	Select **Advanced search**. More details in the next section.
Copy channel data via USB	Select **Copy channel data via USB**. More details in the next section.

Auto search

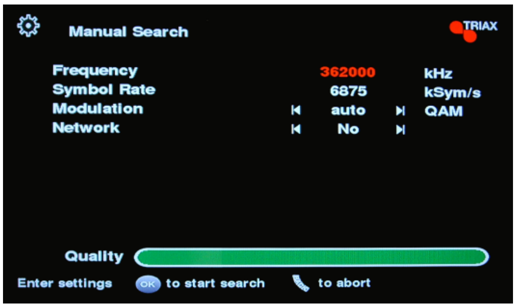


Operator	Select CATV provider, or the operator your CATV provider is using. You can define your CATV provider if not on the list by using the keys in the info line.
Network search	Select NIT search on/off. Your CATV provider may offer NIT.

The info line in **Auto search** displays which keys you can use to define a new CATV provider.

Keys	Description
OK	Start channel search.
Red / Delete	Delete a selected CATV provider from the list.
Green / Add	Add new CATV provider to the list.
Yellow / Edit	Using **Edit** you can add or change the frequency, symbol rate and modulation that the CATV provider uses.
Blue / Rename	Rename the CATV provider.

Manual search

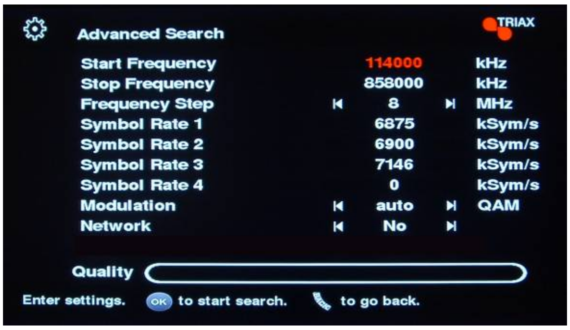


Frequency	Enter the 6 digit frequency you want to search.
Symbol rate	Enter the 4 digit symbol rate.
Modulation	Select modulation. You have five options.
Network search	Select NIT search on/off. Your CATV provider may offer NIT.

⇒ Start search by pressing **OK**.

The signal quality is displayed right above the info line.

Advanced search



Start frequency	Enter the 6 digit frequency from where the search should start.
Stop frequency	Enter the 6 digit frequency from where the search should stop.
Frequency step	Select the frequency step size from 0.5 – 8 MHz.
1. Symbol rate	Enter the 4 digit symbol rate.
2. Symbol rate	Enter the 4 digit symbol rate.
3. Symbol rate	Enter the 4 digit symbol rate.
4. Symbol rate	Enter the 4 digit symbol rate.
Modulation	Select modulation. You have six options, Auto – 256.
Network	Select NIT search on/off. Your CATV provider may offer NIT.

⇒ Start search by pressing **OK**.

The signal quality is displayed right above the info line.

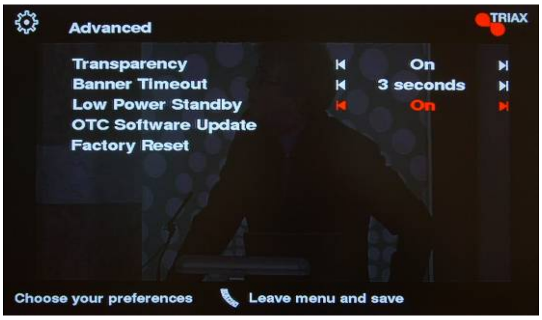
Copy channel data via USB

Using **Copy channel data via USB** you can transfer lists of channels or CATV providers to or from your set-top box to other set-top boxes.



Copy channels to USB stick	Copies the list of channels from the set-top box to the USB stick placed in the USB socket.
Restore channels from USB stick	Copies the list of channels from the USB stick placed in the USB socket to the set-top box.
Copy provider list to USB stick	Copies the list of CATV providers from the set-top box to the USB stick placed in the USB socket.
Restore provider list from USB stick	Copies the list of CATV providers from the USB stick placed in the USB socket to the set-top box.

Advanced



Transparency	Select whether you want menus and information bar to be transparent.
Banner time	Select the number of seconds the info banner is displayed when you change channel. Maximum time for displaying the information banner is 10 sec.
Low power standby	Select whether you want low power consumption when the set-top box is in standby mode. If you select “On”, the loop through from the antenna socket **ANT in** to the antenna socket **ANT out** on the set-top box will not be active.
OTC software update	Select **OTC software update** and the software of your set-top box will be updated if your CATV provider has made new software available. If new software is unavailable you will get a message telling you so.
Factory reset	Select **Factory reset** if you want to bring all settings back to factory settings.

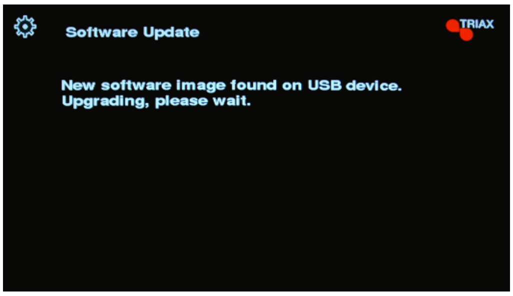
Updating software via USB stick

It is also possible to download software from the home page www.triax.com to an USB stick and then update the set-top box using the USB stick.
The file that you download from the home page to the USB stick is an ".img" file. You must place the ".img" file in the root of the USB stick, and not in a folder that you have created on your USB stick. The USB stick must not contain other ".img" files.

Do the following to update the set-top box using the USB stick:

⇒ Switch on the set-top box so you get a picture on the TV screen.
⇒ Switch the set-top box off, i.e. turn off the mains switch.
⇒ Insert the USB stick into the USB socket at the rear of the set-top box.
⇒ Switch the set-top box on at the mains switch.

The following message is displayed on the TV screen.

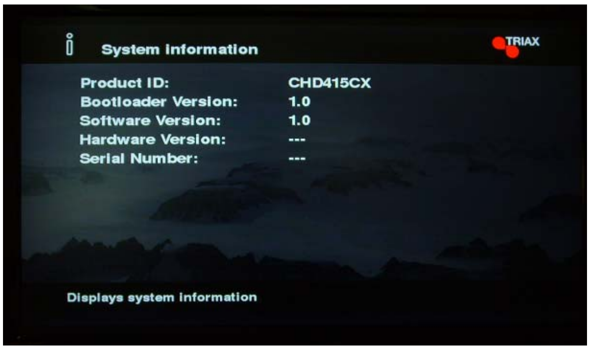


When the download is finished, you have to restart the set-top box, i.e. you have to turn off the mains switch and then turn it on again.



Technical Information

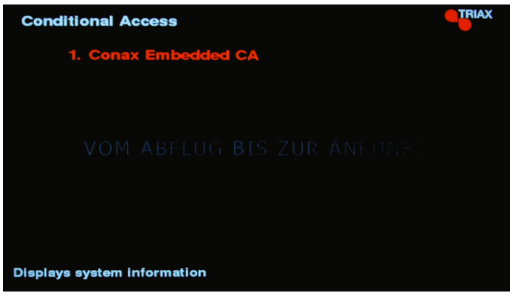
To communicate with authorized technical people the set-top box contains important and very precise technical information about software and hardware implemented. You get access to this information by selecting **System info** in the main menu.



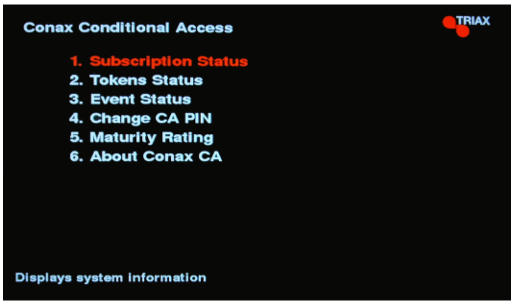
Produkt ID	The product identification of the set-top box.
Bootloader version	Bootloader version.
Software version	Software version.
Hardware version	Hardware version
Serial number	Serial number of the set-top box.

Smart Card

The set-top box has an embedded Conax descrambler working together with a smart card from your provider. You get access to information from the inserted smart card by selecting **Card info** in the main menu.



The Conax smart card provides the following menu when you select **Conax Embedded CA**:



Subscription status	Status of your subscription, i.e. which channel groups you can get access to and whether your smart card has been updated recently.
Tokens status	Status of available tokens for example for pay-per-view services.
Event status	Status on pay-per-event services.
Change CA PIN	Change your personal PIN code for accessing information on the smart card.
Maturity rating	Select the age rating for the different channels.
About Conax CA	Technical card information.

Troubleshooting

Problem	Possible cause	Suggested solution
Not working	Not plugged into the mains.	Make sure that the mains lead is plugged in.
The remote control does not work	The batteries have not been inserted correctly.	Insert the batteries correctly.
	The batteries are flat.	Insert new batteries.
	The remote control is aligned wrongly.	Align the remote control with the front of the set-top box and ensure that nothing is placed between the remote control and the set-top box.
Neither picture nor sound, only on-screen menus	No signal	Check antenna cable from the set-top box to the outlet.
Channel has got new frequency		Delete channel and make a new search.
Bad picture quality, blocking fault, formation of small blocks, drops in sound	Bad connector or antenna cable	Check connectors and antenna cable. If this is OK you have to contact your CATV provider.
No picture, no sound, signal strength is OK, but signal quality is bad	Bad connector or antenna cable	Check connectors and antenna cable. If this is OK you have to contact your CATV provider.

Glossary

AC	Alternating Current. Mains is 230V AC.
Analogue	Unconverted signals not being numerical.
DC	Direct Current. The set-top box operates on 12 V DC.
Cinch connector	RCA connector for base band audio or video signals.
Coaxial cable	Cable for connecting to CATV network.
Digital	Signal converted to a series of numerical values.
Dolby Digital	Six channel Surround Sound system developed by Dolby Laboratories.
DVB	Digital Video Broadcasting.
EPG	Electronic Programme Guide. Programme guide providing you with detailed information on all available programmes.
HDMI	High Definition Multimedia Interface. The new digital standard for digital audio/video connection to the TV or between other units
MPEG-2	International standard for compressing digital audio/video signals.
MPEG-4	Further development of MPEG-2 for even better compression.
MUX	Multiplexer - for mixing more signals into one single channel.
OSD	On-Screen Display - for menu driven operation of equipment.
QAM	Quadrature Amplitude Modulation - modulation normally used for CATV.
SCART	Connection for audio and video signals for TV, DVD players, etc.
Surround sound	Sound system using 5-6 loudspeakers to give a kind of 3-dimnetional effect.
Swap function	Toggling between the two latest seen channels.
VCR	Video Cassette Recorder.
VTR	Video Tape Recorder.

Technical Data

Tuner and channel

Input connector	IEC 169-2; Female
Input frequency range	47 to 862 MHz
Input impedance	75 ohm, unbalanced
Demodulation	QAM 16 / 32 / 64 / 128 / 256
Symbol rate	1-7.2 Msym/s

MPEG transport stream A/V decoding

Transport stream	MPEG-2 / IEC 13818
Profile level	MPEG-2 MP@HL, MPEG-4/H.264 MP and HP level 4.1
Input rate	Max. 100 Mbit/s
Aspect ratio	4:3 / 16:9
Audio decoding	MPEG Layer I & II, Optional Dolby Digital, DTS, AAC
Sampling rate	32, 44,1, and 48 MHz

A/V data in/out

Audio connectors	L/R analogue, coax SPDIF
Video connectors	HDMI, SCART.
HDMI connector	Resolution: 576i, 576p, 720p, 1080i

Processor and memory

Flash memory	4 Mbyte DDR memory: 96 Mbyte
CPU	STI 7101

Power supply

Input voltage	230 VAC +/- 15% / 12 VDC
Power consumption	Max. 10 W
Type	External switching mode
Standby power	Max. 0,5 W

Manufacturer

Dear Customer,

Should you require technical assistance and in the event that your expert dealer is unable to help you, please contact us.

Triax A/S
Bjørnkærvej 3
8783 Hornsyld
Danmark

Declaration of Conformity

The manufacturer declares herewith that this product meets the following directives and standards:

Low voltage directive 73/23/EEC

- EN 60 065

European EMC Directive 89/336/EEC

- EN 55 013
- EN 55 020
- EN 61000-3-2
- EN 61000-3-3



Svend Kristiansen
Quality Manager

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TRIAX - your ultimate connection